

## CLAIMS

What is claimed is:

- 5 1. A method for detecting a target analyte, comprising,
  - a) attaching a reporter molecule to an immobilized target analyte, wherein the reporter molecule comprises a first enzyme,
  - b) adding a composition comprising a first proenzyme;
  - c) converting the first proenzyme into an active second
  - 10 enzyme,
  - d) adding a composition comprising at least one substrate of the active second enzyme; and
  - e) detecting the change in the substrate due to activity of the active second enzyme.
- 15 2. The method of Claim 1, wherein the method further comprises adding a second proenzyme after step b); wherein the second proenzyme is changed to an active third enzyme by the activity of the active second enzyme.
- 20 3. The method of Claim 1, wherein converting the first proenzyme into an active second enzyme comprises cleavage of the first proenzyme into an active second enzyme and at least one other peptide by the active first enzyme.
- 25 4. The method of Claim 3, where the detecting step comprises detection of the at least one other peptide.
5. The method of Claim 1, wherein the target analyte is a nucleic acid sequence, a protein, a peptide, or a single nucleotide polymorphism, or a carbohydrate.
- 30 6. The method of Claim 1, wherein the compositions comprising at least one substrate comprises proteins of the complement system.
- 35 7. A method of signal amplification, comprising,
  - a) hybridizing a reporter molecule to an immobilized target analyte, wherein the reporter molecule comprises a first enzyme,

- b) adding a composition comprising a first proenzyme;
- c) converting the first proenzyme into an active second enzyme,
- d) adding a composition comprising at least one substrate of the active second enzyme; and
- e) detecting the change in the substrate due to activity of the active second enzyme.

8. The method of Claim 7, wherein the method further comprises adding a second proenzyme after step b); wherein the second proenzyme is changed to an active third enzyme by the activity of the active second enzyme.

9. The method of Claim 7, wherein converting the first proenzyme into an active second enzyme comprises cleavage of the first proenzyme into an active second enzyme and at least one other peptide by the active first enzyme.

10. The method of Claim 9, where the detecting step comprises detection of the at least one other peptide.

11. The method of Claim 7, wherein the target analyte is a nucleic acid sequence, a protein, a peptide, or a single nucleotide polymorphism, or a carbohydrate.

12. The method of Claim 7, wherein the compositions comprising at least one substrate comprises proteins of the complement system.